

IN THE SPECIFICATION

To correct certain typographical errors, please amend the paragraph beginning "The electrical generator 60 provides electrical power to operate . . . " on Page 10, line 17 of the Specification as follows:

The electrical generator 60 provides electrical power to operate control and signal processing circuits 46 disposed in a sealed chamber 46A in the housing 43. Functions that are provided by the circuits 46 will be further explained, however, it is contemplated that the circuits 46 will include a programmable central processor, driver circuits to operate ~~throttling valves 59~~ **throttling valves 52** and command interpretation circuits to decode control commands sent from the earth's surface. Such commands may be transmitted by modulating, at the earth's surface, the pressure of the drilling mud (35 in FIGURE 1) as it flows through the drill string. Pressure modulation commands may be detected by a pressure transducer 61 disposed on the drive shaft 40 and electrically coupled to the circuits 46. Although not shown in FIGURE 2, typical electrical connections between elements disposed in the drive shaft 40 (or any other rotating part of the drill string) and elements disposed in the housing 43 may be accomplished using slip rings or the like. Accordingly, the position and coupling of the transducer 61 in FIGURE 2 is only intended to illustrate the principle of embodiments of the invention and is not to limit the scope of the invention. Transmitting commands and/or other signals from the Earth's surface to an instrument in a wellbore using mud pressure modulation telemetry is described, for example, in U. S. Patent No. 5,113,579 issued to Scherbatskoy.

To correct certain typographical errors, please amend the paragraph beginning "During operation of the source 10, the circuits 46 operate . . . " on Page 12, line 10 of the Specification as follows:

During operation of the source 10, the circuits 46 operate the ~~throttling valves 59~~ **throttling valves 52**, in one embodiment, to alternately hydraulically couple the back side of the pistons 48 to the accumulator 59, and to the reservoir 44. Alternately hydraulically

coupling the pistons 48 in this manner causes the pistons 48 to alternately exert larger and smaller force on the ribs 50, and thus to the wall of the wellbore (12 in FIGURE 1). In some embodiments, the circuits 46 are programmed to operate the ~~valves 59~~ throttling valves 52 to alternate the pressure applied to the pistons in a swept frequency band, through seismic frequencies of interest. In some embodiments, the frequencies are within a range of about 5 to 80 Hz. This form of operation of the pistons 48 will be familiar to those skilled in the art as similar to a surface deployed vibratory seismic energy source. One such source is sold under the trade name VIBROSEIS, which is a mark of ConocoPhillips, Inc., Houston, Texas.